

REMARKS

Upon careful and complete consideration of the Office Action dated January 29, 2009, Applicants have amended the claims which, when considered in conjunction with the comments herein below, are deemed to place the present application into condition for allowance. Favorable reconsideration of this application, as amended, is respectfully solicited.

Claims 1, 4, 6, 8, 10-12, 14, 16-18, 40, 41, 43, 45, and 47-57 have been amended. Claims 3, 21-39, and 42 remain cancelled, while claims 5, 7, 15, 44, and 46 have been additionally cancelled. New claims 64-66 have also been entered. Therefore, claims 1, 2, 4, 6, 8-14, 16-20, 40, 41, 43-45, 47-57 and 64-66 are under consideration. No new matter has been entered.

Claim 1 (the main method claim) has been amended in several ways. First, the claim has been amended to specifically recite "a humic acid and/or fulvic acid and/or a salt thereof" in place of "an acid" since humic and/or fulvic acids and/or salts thereof are examples of acids, and more specifically, weak organic acids and/or salts thereof (i.e., in addition to being binder promoters). Support for this amendment is found at, for example, page 14, lines 10-14; page 9, line 20 to page 10, line 8; and page 69, lines 10-15 of the application as filed. Second, the claim has been amended to delete the recitation that a sugar is present, since this is an optional ingredient (see, for example, page 4, line 13 to page 5, line 3; and page 5, lines 8-10 of the application as filed). This feature has instead been placed in new dependent claim 64. Third, the claim has been amended by specifying that the particulate material is soil (i.e., a carbonaceous earth material). Support for this amendment is found at, for example, page 17, lines 9-12 of the application as filed. Fourth, the claim has been amended by replacing the phrase "set over a period of time longer than 30 minutes" to "set over a period of time of at least 30 minutes." Support for this amendment can be found at, for example, page 15, lines 15-19 of

the application as filed. Fifth, the claim has been amended to recite in the preamble that the aggregate matrix material is useful as a road construction material (i.e., as an exemplary use among numerous other related types of uses). Support for this amendment can be found at, for example, page 16, lines 15-21, page 20, lines 20-21, and page 40, lines 18-20 of the application as filed.

Claim 40 (the main composition claim) has been amended similarly to claim 1.

New claims 64 and 65 depend from claims 1 and 40, respectively, and further specify inclusion of a sugar. Support for the additional subject matter of these claims is found at, for example, page 8, lines 3-5 of the application as filed.

New claim 66 is directed to an article of construction containing the aggregate matrix composition as prepared by claim 1. Support for the subject matter of claim 66 is found at, for example, page 14, lines 1-3, page 24, lines 1-7, and page 65, lines 10-16 of the application as filed.

A particularly important feature of the instant claims is the inclusion of fulvic and/or humic acids (and/or their salts). In particular, fulvic acid and humic acids advantageously have a positive effect on the soil component by functioning as both binder promoters and acids. As binder promoters, fulvic and humic acids engage in a special interaction with soil to cause an increased binding (e.g., indirect tensile strength, or ITS) of the binder composition or resulting solid aggregate matrix material (which contains the soil particulate). By this special interaction, fulvic and humic acids impart high binding and strength characteristics to the claimed construction material. This type of binding interaction is not found between humic/fulvic acid and other unrelated types of particulate matter, such as glass and metals. Support for the

foregoing concepts is found at, for example, page 49, lines 5-18, page 40, lines 12-16, page 66, lines 4-7, and Fig. 9 of the application as filed.

In the Office Action, the Examiner has rejected claims 1, 2, 4, 5, 8, 9, 12-20, 40, 41, 43, 44, 47, 48 and 51-60 under 35 U.S.C. §103 (a) as allegedly unpatentable in view of International Publication No. WO 00/40669 to De Bruyn in further view of U.S. Patent No. 4,886,854 to Markessini. In making the rejection, the Examiner considers De Bruyn to teach all of the features of the indicated claims, except for a sugar, while Markessini is relied upon to teach a sugar. However, the foregoing rejection is moot in view of the fact that main claims 1 and 40 have been amended to, *inter alia*, delete recitation of a sugar component.

Notably, De Bruyn and Markessini do not teach inclusion of a humic acid/fulvic acid component. In contrast, the instant claims include a humic acid/fulvic acid component. Moreover, the significant advantages of humic and fulvic acids on the claimed composition have been discussed above. Therefore, the combination of De Bruyn and Markessini is clearly deficient in rendering the instant claims obvious. Accordingly, Applicants respectfully request that the rejection of the claims over De Bruyn and Markessini be withdrawn.

In the Examiner's 35 U.S.C. §103 (a) rejection of claims 6-7 and 45-46 in view of De Bruyn in further view of U.S. Patent No. 5,523,049 to Terpstra et al., the Examiner relies on Terpstra et al. for teaching a humic acid component. However, though Terpstra et al. mention humic acid (specifically, in col. 4, lines 26-30 therein), Terpstra et al. do not teach a soil component or any related particulate. Instead, Terpstra et al. teach that the particulate used therein is a thermally conductive powder, such as a metal or ceramic powder (e.g., copper, born nitride, silver, aluminum, and the like). See, for example, col. 3, lines 33-50 of Terpstra et al. Terpstra et al. use the thermally conductive powder in order to produce heat sinks, which are, of

course, required to be thermally conductive. In contrast, soil is completely different compositionally than any of the thermally conductive materials described in Terpstra et al., and moreover, soil is known to be thermally non-conductive. Moreover, soil is known to function as a barrier to heat transport, i.e., as a thermal insulator which absorbs and stores heat.

Furthermore, because of the absence of a soil component in Terpstra et al., the humic acid used in Terpstra et al. does not provide any of the advantages as found in the claimed invention since, as discussed above, humic and fulvic acids specifically interact with soil to increase the strength and binding of the material. As would be expected, Terpstra et al. do not teach or suggest any such advantages are possible by using the humic acid mentioned therein.

Even more, Terpstra et al. do not teach an application of the composition taught therein which is in any way related to the exemplary application of the instant claims, i.e., a road construction material or any related construction material. Instead, Terpstra et al. teach directing the composition therein to electronic circuits, where heat sink materials are particularly useful. As can be readily appreciated, thermally-conductive materials, such as those taught by Terpstra et al., would not be considered as road construction or related building materials. Similarly, soil-based compositions, as instantly claimed, would not be considered to be in any way applicable for use with electronic circuits or devices.

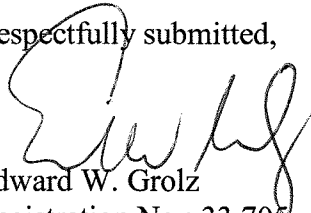
Therefore, in recognition of the very incompatible goals of the claimed invention and Terpstra et al., a person skilled in the art would not be led to Terpstra et al. for guidance in making an improvement to, or otherwise modifying, De Bruyn. Furthermore, as shown above, there is no teaching or suggestion in Terpstra et al. which would motivate a person skilled in the art to modify De Bruyn such that the instant claimed invention is contemplated. It is therefore evident that the combination of De Bruyn and Terpstra et al. is not only an improper combination

of references in view of the claimed invention, but completely deficient in teaching or suggesting the claimed invention. Accordingly, for the reasons given, Applicants respectfully request that the rejection of the claims over De Bruyn and Terpstra et al. be withdrawn.

The Examiner has also rejected claims 10-11 and 49-50 under 35 U.S.C. §103 (a) in view of De Bruyn in further view of U.S. Patent No. 4,376,088 to Prather ("Prather"). The Examiner relies on Prather solely for teaching a surfactant (e.g., dodecylbenzene) in a binder composition. However, as Prather does not compensate for any of the deficiencies already noted for De Bruyn, the combination of De Bruyn and Prather is similarly deficient. Accordingly, as the foregoing combination of references do not render the indicated claims obvious, Applicants respectfully request that the rejection be withdrawn.

In view of the foregoing comments and amendments submitted in response to the Office Action, which are deemed to be fully in compliance with and responsive to the Examiner's requirements, the early and favorable reconsideration and allowance of the application is earnestly solicited.

Respectfully submitted,



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